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MAR - 9 1994

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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March 9, 1994

VIA MESSENGER

Mr. William Caton

Acting Secretary

Federal Communications Commission

1919 M Street, N.W.

Washington, D.C. 20554

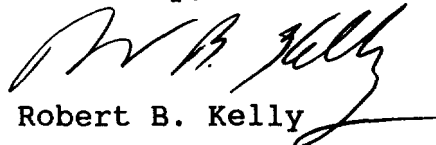
Re: Ex Parte Presentation
Gen. Docket 90-314

Dear Mr. Caton:

On behalf of KSI Inc. ("KSI") and pursuant to Section 1.1206(a) of the Commission's Rules, this will constitute notice that on March 9, 1994, Charles J. Hinkle, Jr. and John Maloney of KSI, and Robert B. Kelly, counsel to KSI, met with Dr. Thomas P. Stanley, Chief Engineer of the Office of Engineering and Technology and his Staff concerning KSI's patented Direction Finding Localization System as described in KSI's January 3, 1994 Comments in this Docket. A copy of the attached material was distributed at the meeting. Two copies of this notice are attached hereto.

Should there be any questions on this matter, kindly communicate with this office.

Sincerely,


Robert B. Kelly

Dr. Thomas P. Stanley

KSI INC.

Presents DFLS

A Wireless ALI System



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**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY**

DFLS

Direction Finding Localization System

**Patented System for Localizing RF
Transmitters (e.g. Cellular)**

EKSI[®]

KSI INC.
7630 LITTLE RIVER TURNPIKE
SUITE 212
ANNANDALE, VIRGINIA 22003
TEL: (703) 941-5749
FAX: (703) 941-5786

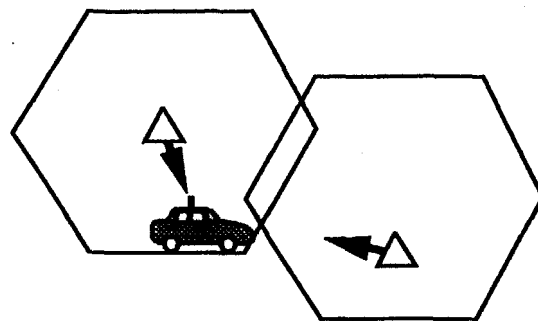
Attn: CHARLES J. HINKLE, JR.

**Experts In Signal Analysis, Source
Localization And Tracking**

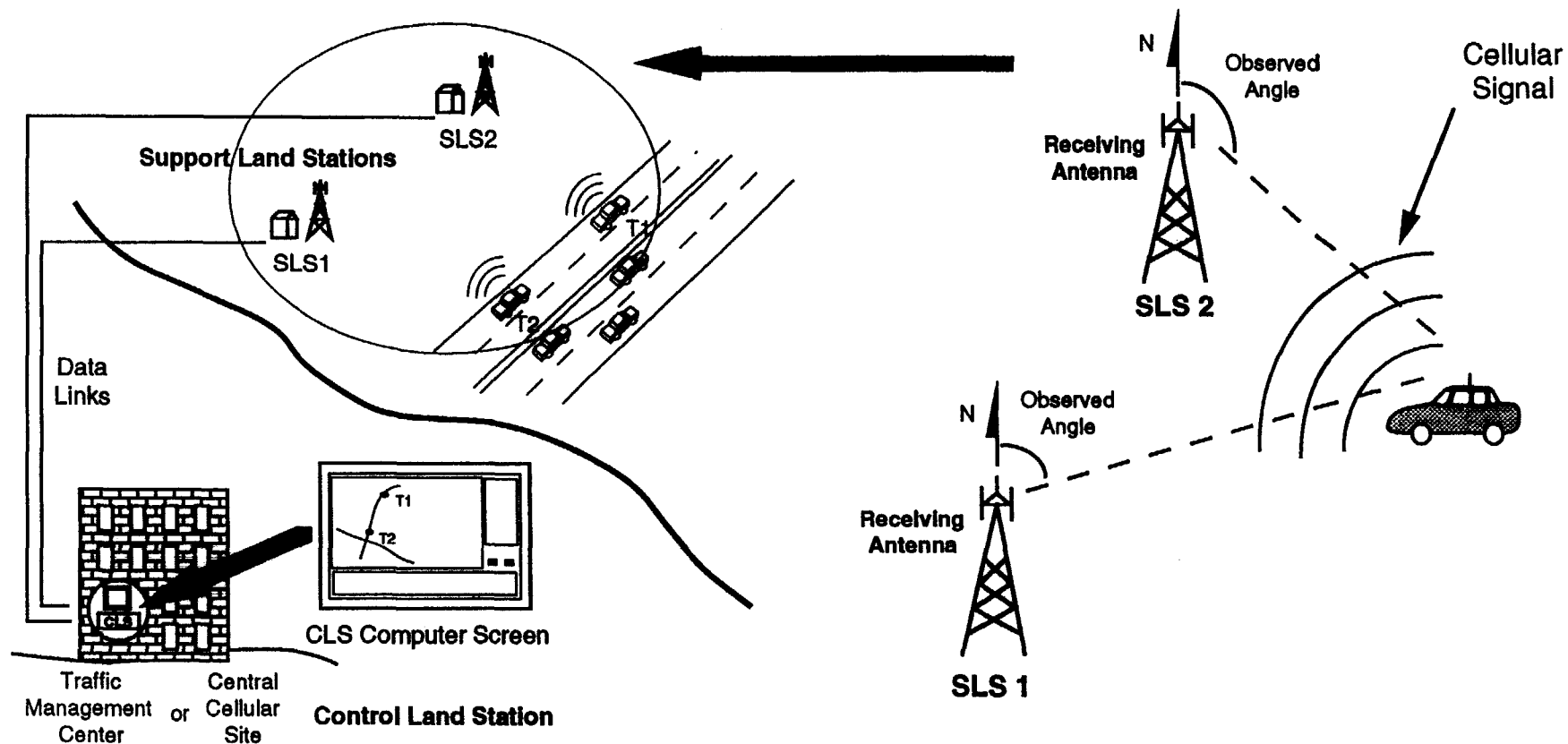
EKSI[®]

DFLS TECHNOLOGY

- DFLS Exploits Radio Frequency Energy by Deriving Angles of Arrival of That Energy
- Using Two or More Receiving Sites and Simple Geometry, The Location of a Vehicle is Determined



DFLS SCENARIO



KSI Inc.'s patented Direction Finding Localization System (DFLS)

VEHICLES AS PROBES For Traffic Monitoring

EXISTING FLEET

- **Emergency Vehicles**
 - **Police, Fire, and Rescue**
- **Transit Vehicles (e.g., Buses)**
- **Public-Service Vehicles**
- **Private Cars and Trucks**

PASSIVE SERVICES

- **Flow Velocities**
- **Incident Detection**
- **911 Alerting**

DFLS PROVIDED WIRELESS E-911

REQUIREMENT

PSAP
(Public Safety Answering Point)

ALI
(Automatic Location Information)

CPN
(Calling Party Number)

CVC
(Correlation to Voice Channel)

CFI
(Cell Face Identification)

RVE
(Response Vehicle Enhancement)

SYSTEM CAPABILITY

Workstation
(PC-based with map)

Latitude and longitude (with
uncertainty) of caller

Telephone number of caller

Channel Identification
(control and voice)

Map display with CC designation

Cellular phone and/or monitor

SYSTEM SYNERGY

Resolves Chicken/Egg Problem

Uses existing cellular base

Evolutionary Issues

Fully compatible with Digital and PCS

Other Services

Solves major requirements of IVHS and LEAs

Revenue

Both generation and conservation

WIRELESS LOCALIZATION

RF TECHNOLOGY OPTIONS

- **Time Difference of Arrival**
 - **Bandwidth Limitation**
 - **Accurate Inter-Site Synchronization**
 - **Signal "Fingerprint" Comparison**
 - **Multipath Propagation**
- **Direction Angle of Arrival**
 - **Multipath Propagation**

BENEFITS

- **Voice, Data, and Location**
- **Existing Fleets**
- **Early Winner**
- **No In-Vehicle Cost**

OTHER "WIRELESS" OPTIONS

Wireless With

- Global Positioning System (GPS)
- LORAN-C
- Map Matching
- Instrumentation: Gyro, Speedometer, Compass, Wheel Position, Gear Position, Tachometer, Etc.

Problem: Increased In-Vehicle Cost

PUBLIC BENEFITS

<u>USER</u>	<u>PROBLEM</u>	<u>BENEFIT</u>
DOT (IVHS)	Congestion <ul style="list-style-type: none"> • Productivity • Pollution • Energy Waste Safety	\$100 Billion/yr + 40,000 Lives/yr
DOD	Monitoring <ul style="list-style-type: none"> • Own Assets • Threat Forces 	Efficiency Lives
Law Enforcement DEA	Illicit Drugs	\$100s Million, Lives
Secret Service	Cellular Telephone Fraud	\$365 M - 1 B /yr
Police	Car Theft Organized Crime	\$6 B /yr
FBI	Terrorism	Lives

E-911	911 with Location
NENA	National Emergency Number Association
APCO	Associated Public Safety Communications Officers
TIA	Telecommunications Industry Association
PSAP	Public Safety Answering Point
ALI	Automatic Location Identification
AVL	Automatic Vehicle Location
ANI	Automatic Number Identification
CPN	Calling Party Number
IVHS	Intelligent Vehicle Highway Systems
LEA	Law Enforcement Agency